Information Brief

Use of the Supports Intensity Scale on a Sample of Individuals with Developmental Disabilities Receiving Services in Rhode Island

August 15, 2010

Introduction

Since 2008, the Human Services Research Institute (HSRI) (a sub-contractor to PAL: An Advocacy Organization for Families and People with Disabilities) has been working in Rhode Island to help the state better understand options for improving its Home and Community Based Services (HCBS) waiver program. This work was initiated by the Rhode Island Department of Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH), to prepare for the state's transition to a federally approved Global waiver (involving all 11 waivers for all populations). Rhode Island chose to explore broader use of the Supports Intensity Scale (SIS) as a needs assessment tool in its resource allocation model.

As a part of the pilot project to assess the feasibility of using the SIS in Rhode Island, the instrument was administered to 465 individuals with intellectual and developmental disabilities between October 2008 and June 2010. All but eight of these individuals received Medicaid-funded home and community-based waiver services (HCBS) through Rhode Island's comprehensive waiver.

This report documents the findings based on the 465 individuals who received a SIS assessment during the timeframe noted above. What follows is: (a) background information on the SIS; (b) a summary of methods used to gather and analyze the data; (c) major findings, including cross-state comparisons; and (d) concluding remarks. Additional resources are available in the appendix, and are referenced where applicable.

1. Background Information on the Supports Intensity Scale

The SIS is a validated and normed tool developed over a five-year period by the American Association on Intellectual and Developmental Disabilities (AAIDD). It is the only tool that directly addresses support needs rather than the disabilities and behaviors that lead to a need for supports. The SIS was normed using a nationwide sample of 1,306 adults with developmental and other disabilities 18 years of age or older from 33 states and two Canadian provinces. **Appendix A** contains information about the psychometric properties of the SIS.

The SIS assessment tool consists of three segments:

- Section1. Support Needs Scale: This section documents the general support needs of individuals in terms of how often the support is needed, how long it takes to provide, and what type of assistance is needed (ranging from monitoring to full

physical assistance). Six sub-sections address the major areas in which support is typically needed:

Part A: Home Living Activities

Part B: Community Living Activities

Part C: Lifelong Learning Activities

Part D: Employment Activities

Part E: Health and Safety Activities

Part F: Social Activities

- Section 2. Supplemental Protection and Advocacy Scale: The section examines the types of activities the individual performs to protect and advocate for him or herself. As in Section 1, each activity is rated in terms of frequency, time, and type of support.
- Section 3. Exceptional Medical and Behavioral Needs: This section documents extra support needed to deal with particular medical and behavioral conditions, above and beyond the regular daily supports covered in Section 1.

Part A: Medical Supports Needed

Part B: Behavioral Supports Needed

2. Methods of Analysis

The Rhode Island Department of Administrative Information Technology selected a stratified random sample of candidates to be assessed using the SIS. Assessments were conducted by seven interviewers that were trained and certified by AAIDD, the publishers of the SIS. AAIDD was also retained to check and assure their reliability. Completed assessments were stored electronically on SIS Online, a service designed specifically to safely secure and store SIS interview data.

Subsequently, HSRI requested and obtained from the Department of Behavioral Healthcare, Developmental Disabilities and Hospitals (BHDDH)an electronic file containing a sample of 465 individuals that included data and other relevant information. Upon receipt, HSRI examined these files to assess the data for reliability and accuracy. Once the data were deemed acceptable, HSRI performed four types of analysis/comparisons using SPSS (a statistical software package):

1. HSRI examined results from each of the six SIS subscales and the total Support Needs Index (SNI).
2. From Section 1 of the assessment, a composite score utilizing Parts A, B, and E was created and examined;
3. Similarly, Section 3a medical support needs scores were examined; as well as,
4. Section 3b behavioral support needs scores.

HSRI's prior experience and work in other states demonstrates the utility of the latter three SIS scales for resource allocation purposes. These key variables have been good predictors of waiver expenditures and direct service hours.

3. Findings

The results suggest that the overall support needs of Rhode Island's Sample are similar to the mainstay Medicaid waiver populations in other states. What follows is: (a) an overview of the Rhode Island Sample Population; (b) a comparison of the Rhode Island Sample with the SIS Norm Group population, and (c) a comparison of the Rhode Island Sample's results to results from comprehensive waiver populations in other states.

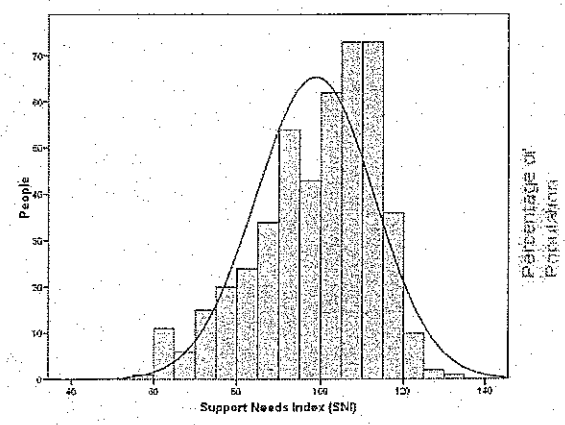
3.1: Overview of the Rhode Island Sample and comparison of Rhode Island Sample SIS scores to the Norm Group SIS scores

In all, Rhode Island BHDDH serves 3,570 individuals with developmental disabilities through its service system. The **Sample** used for this analysis consisted of 13% (465 people) of the full population.

In **Figure 1** below, the Support Needs Index (SNI) scores for the Rhode Island service participants are charted and compared to the normal distribution pattern from the SIS Norm Group. Each bar represents an SNI interval of 5 points.

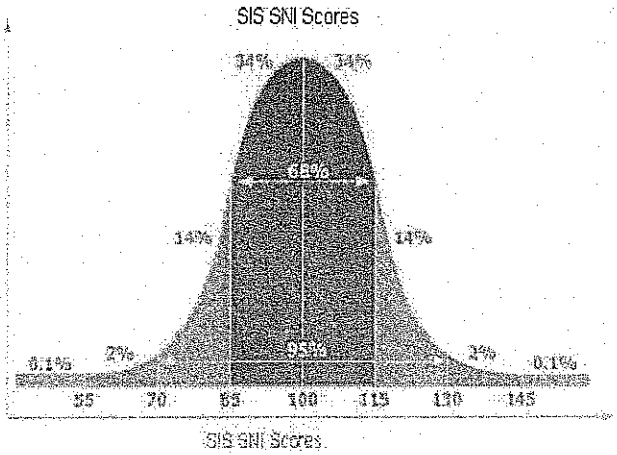
Figure 1: Support Needs Index (SNI) Scores for Rhode Island & the SIS Norm Group

Rhode Island Sample (n=465)



Average = 98.70
Standard Deviation = 14.19
People = 465

SIS SNI Example of Normal Distribution



Average = 100.00
Standard Deviation = 15.00
People = 1,306

The SIS SNI norm group has an average score of 100.00 and a standard deviation of 15.00 and forms a normal distribution pattern with the familiar bell-shaped curve, as illustrated above on the right. As the graph on the left shows, the average SNI score for the Rhode Island Sample (98.70) is somewhat lower than the average SNI score for the SIS Norm Group. The Rhode Island Sample data does, however, exhibit a bell-shaped spread of individuals' support needs; including those with high and low support needs.

Table 1 compares the Rhode Island Sample to the SIS Norm Group along several other SIS variables. Most of Rhode Island's mean scores are somewhat lower than average scores of the SIS Norm Group. The average "ABE" sum standard score (i.e., the sum of Section 1 standard scores on subsections A, B, and E) in Rhode Island was 28.72 (compared to 30.00 for the Norm group). ABE score captures support needs that have been shown to be particularly important to costs of providing services. The average medical needs score was 2.84 (compared to 3.23 for the Norm population). The average behavioral needs score of 5.50 in Rhode Island, on the other hand, was higher than for the Norm group (4.99). However, differences between the Rhode Island Sample and the Norm group in medical and behavioral need scores are relatively small, especially considering the range of scores possible.

Table 1. Rhode Island Sample SIS Results

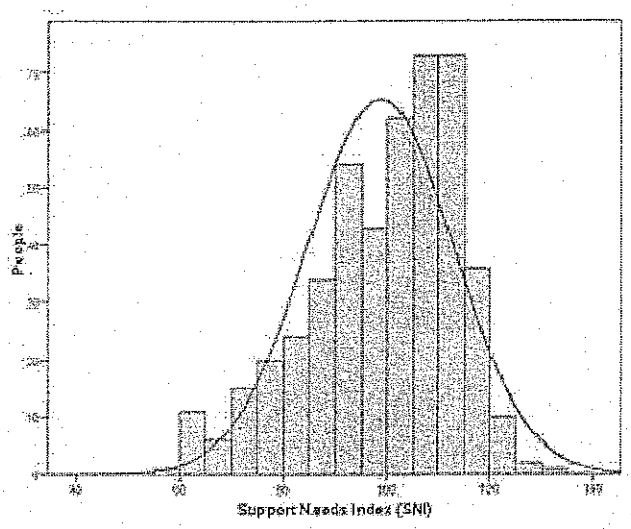
	Rhode Island Sample					SIS Norm
	People	Minimum	Maximum	Mean (Average)	Standard Deviation	Average Scores
SIS Support Needs Index (SNI)	465	59	132	98.70	14.19	100.00
ABE Sum Standard Score	465	9	44	28.72	7.18	30.00
Total Medical Needs	465	0	22	2.84	3.43	3.23
Total Behavioral Needs	465	0	24	5.50	5.32	4.99

3.2: Comparing Rhode Island's Sample to other states and to the HSRI SIS Database

HSRI maintains a growing database of SIS assessment scores for individuals residing in several states. In the following figures and tables, "HSRI SIS Database" refers to SIS assessment data for 24,588 individuals receiving waiver-funded and state-funded services in Colorado, Georgia, Missouri and Utah.

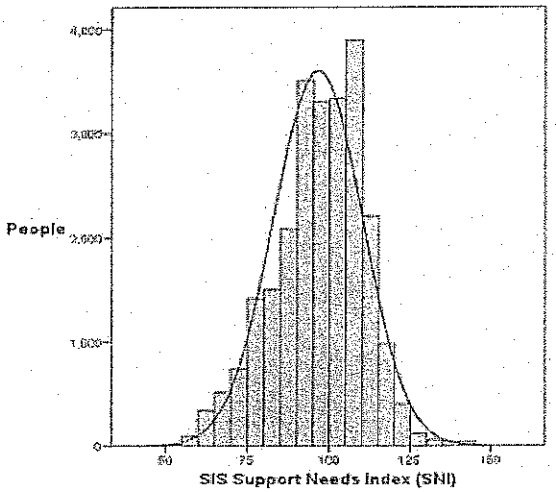
Figure 2 once again shows the distribution of SNI scores for individuals in the Rhode Island Sample, but here compares it to the HSRI SIS database. As can be seen from the graph, the Rhode Island SNI average is somewhat higher than the average for the whole HSRI SIS database.

Figure 2: Support Needs Index (SNI) Scores for Rhode Island & the HSRI SIS database



Rhode Island Sample

Average = 98.70
Standard Deviation = 14.187
People = 465



HSRI SIS Database

Average = 96.43
Standard Deviation = 13.607
People = 24,588

In **Table 2**, we compare SIS assessment scores for the Rhode Island Sample to scores in select other states and programs within states. Like Rhode Island, Missouri and Utah mainly provide services to people under comprehensive waivers. Utah does provide some state-only funded services to a hundred individuals, while Rhode Island serves many waiver participants with waiver like services funded by the Medicaid State Plan. The comparisons below focus on four summary SIS measures: (a) the SNI; (b) the sum of Section 1 standard scores on subsections A, B, and E ("ABE"); (c) Section 3a total medical score; and (d) Section 3b total behavioral score.

Some notable findings are:

- The average ABE score for Rhode Island is somewhat higher (28.72) than the average for the whole HSRI waiver –Served SIS population (27.31).
- Average Medical score for Rhode Island is somewhat higher (2.84) than for HSRI waiver-served SIS population (2.06).
- Average Behavioral score for Rhode Island Sample is almost two points higher than for HSRI waiver-served SIS population (5.50 for Rhode Island, 3.70 for HSRI population).
- Out of the comparisons listed, Rhode Island is most similar to Colorado's Comprehensive and SLS waiver participants.

Table 2: SIS Cross-State Comparisons					
Group/State	**People**	**Total Support Needs Index**	**SUM ABE**	**Medical Support**	**Behavioral Support**
		(Range 54-143)	(Range 8-55)	(Range 0-32)	(Range 0-26)
SIS Norm	1,306	100.00	30.00	2.47	4.99
2010 Rhode Island Sample					
RI Comp HCBS waiver and Medicaid State Plan Funded Individuals 2010	465	98.70	28.72	2.84	5.50
Other states combined funding					
Colorado Comprehensive & SLS waiver 2010	6,849	97.49	27.91	2.99	5.55
Total Missouri Sample (3 waivers) 2010	6,345	94.94	27.07	2.35	4.20
UT Comp waiver & State Funded Individuals 2010	3,503	99.95	29.34	2.12	4.15
Georgia Comp & NOW waivers 2009	11,174	96.65	26.54	1.54	2.81
HSRI combined waiver data					
HSRI SIS Database 2009	21,396	97.32	27.31	2.06	3.70
Human Services Research Institute (2010) Tualatin, OR					

4. Concluding Remarks

These analyses show that the SIS can be used to assess the support needs of individuals in Rhode Island. The analysis shows that the overall support needs, as measured by the SNI, in the Rhode Island Sample are similar to other state combined funding HCBS waiver populations of individuals living in the community. The overall medical and behavioral challenges in Rhode Island are also similar. This pilot study of the Rhode Island Sample suggests great potential for allocating resources to individuals with developmental or intellectual disabilities in the state based on an objective assessment of their support needs. Next steps, assuming Rhode Island moves forward with a resource allocation system, will include administering the SIS and some supplemental questions to the whole population of the state. Once the data are collected, they will be matched against expenditures and/or anticipated costs related to use of a specified service array. Based on these two pieces – an objective assessment of need and per-person expenditures, a resource allocation system (algorithm) will be developed that will create individual allocation budgets or individual budget levels for people served in Rhode Island.

Appendix A: Validity Results of the SIS

- ✓ Face Validity. Developed to measure the construct of supports, the SIS has greater face validity than the ICAP or other traditional assessments. The assessment of support needs using the SIS is done directly by persons with first-hand knowledge of the individual. The SIS directly measures the level of supports needed to enable an individual to participate successfully in the life of his or her community. It necessarily looks at more than skills and deficits, considering motivation, health, etiology, problem behavior, environment and other variables influencing the need for supports. By measuring individual support needs directly, it avoids the error inherent in inferring support needs statistically based on adaptive and maladaptive behavior scales. It is transparent. The SIS assessment of needed supports is more explicit and straightforward than other traditional instruments, and hence is a more open platform for the stakeholder deliberation and decision-making that attends individual resource allocation and payment processes. The SIS uses multi-point scales to rate the type (monitoring – full physical assistance), frequency (none to hourly) and intensity (no time to more than 4 hours in a 24 hour period) of supports needed by an individual to participate in 57 distinct aspects of life in their communities. Behavioral, health and other factors affecting support needs are considered.[12]
- ✓ Content Validity. To assure its content validity, the SIS was constructs were tested by 74 professionals working in the field of developmental disabilities. Using a Q-sort methodology, they narrowed the 130 candidate support indicators to 57, and reduced the 12 domains containing these indicators to seven. This makes the instrument more concise while still asking the right questions. The validity of the SIS has been examined in a number of countries.[345678] Efforts have been made to see the efficacy of the SIS in predicting

[1] Thompson, J. R., Bryant, B. R., Campbell, E. M., Craig, E. M., Hughes, C. M., Rotholz, D. A., Shalock, R. L., Silverman, W. P., Tassé, M. J., & Wehmeyer, M. L. (2004). *Supports Intensity Scale. Users' manual.* Washington, DC: American Association on Mental Retardation.

[2] Thompson, J. R., McGrew, K.S., & Bruininks, R. H. (2002). Pieces of the puzzle: Measuring the personal competence and support needs of persons with intellectual disabilities. *Peabody Journal of Education, 77,* 23-39.

[3] Shalock, R. L., Thompson, J. R., & Tassé, M. J. (2008a). *International implementation of the Supports Intensity Scale.* Washington, DC: American Association on Intellectual and Developmental Disabilities.

[4] Giné, C. (2008). Catalan translation of the Supports Intensity Scale. In R. L. Shalock, J. R. Thompson, & M. J. Tasse (Eds.), International implementation of the Supports Intensity Scale (pp. 7-8). Washington, DC: American Association on Intellectual and Developmental Disabilities.

[5] Buntinx, W. H. E., (2008). The Dutch version of the Supports Intensity Scale. In R. L. Schalock, J. R. Thompson, & M. J. Tassé (Eds), Psychometric properties of the Supports Intensity Scale (pp. 6-10). Washington, DC: American Association on Intellectual and Developmental Disabilities.

[6] Llewellyn, G., Riches, V. C., Hindmarsh, G. J., Parmenter, T. R., & Chan, J. (2005). *I-CAN: Instrument to classify support needs for people with disability.* Sydney, Australia: University of Sydney and Centre for Developmental Disabilities Studies.

[7] Morin, D., & Cobigo, V. (2008). The French Version of the Supports Intensity Scale. In R. L. Shalock, J. R. Thompson, & M. J. Tassé (Eds.), Psychometric properties of the Supports Intensity Scale (pp. 3-4). Washington, DC: American Association on Intellectual and Developmental Disabilities.

[8] Verdugo, M., Arias, B., Ibanéz, A., & Gómez, L. (2006). *Validation of the Spanish version of the Supports Intensity Scale. Journal of Applied Research in Intellectual Disabilities, 19,* 274.

- ✓ extraordinary support needs (N=274).[9] The SIS is often used to inform interdisciplinary team individual service plans[10] and is increasing used to form resource allocation systems.[11]

Internal Consistency. The SIS is internally consistent.[12][13] It has good inter-item reliability (all items or subscales in the measure are measuring the same construct). The internal consistency reliability coefficients for all the SIS subscales, computed using Cronbach's Alpha method[14], exceeded .90, which is the level widely accepted as demonstrating an acceptable level of internal consistency in assessment scales. The SIS also has a high degree of inter-rater reliability[15]: the SIS Index (total score) correlation coefficient was .87 (same interviewer, different respondent), .90 (different interviewer, same respondents), and .85 different interviewer and different respondents) (N=40). All correlation coefficients exceeded the .35 minimum level required to demonstrate criterion-related validity.[16]

Construct and criterion validity. The high correlation of SIS subscale scores with one another shows that the SIS measure has good construct validity, meaning that scores on the SIS are highly correlated with scores on measures of other constructs (for example, adaptive behavior and intelligence) that are believed to be correlated with the construct measured by the SIS. To establish its criterion validity, the SIS measures of support needs were correlated with an independently constructed "criterion measure" - a Likert-type scale of support needs. All correlation coefficients exceeded the .35 minimum level required to demonstrate criterion-related validity.[17] Support for the construct validity of the Supports Intensity Scale based on clinician rankings of need (N=50) was explored in Ontario Canada in 2009.[18] Factor analysis in The Netherlands and Belgium with 14,862 individuals has added support to the overall integrity of the SIS and to the confirmatory factor analysis supporting

[9] Wehmeyer, M., Chapman, T. E., Little, T.D., Thompson, J. R., Shalock, R., and Tassé, M. J. (2009). Efficacy of the Supports Intensity Scale (SIS) to Predict Extraordinary Support Needs. *American Journal of Intellectual and Developmental Disabilities, 114*(1), 3-14.

[10] Shalock, R. L., Thompson, J. R., & Tassé, M. J., (2008b). Relating Supports Intensity Scale information to Individual Service Plans. Washington, DC: American Association on Intellectual and Developmental Disabilities.

[11] Shalock, R. L., Thompson, J. R., & Tassé, M. J., (2008c). Resource allocation and the Supports Intensity Scale: Four papers on issues and approaches. Washington, DC: American Association on Intellectual and Developmental Disabilities.

[12] Tassé, M. J. Thompson, J. R. & McLaughlin, C. (2006). *Inter-interviewer and inter-respondent concordance on the Supports Intensity Scale.* Poster presentation at the International Summit for the Alliance on Social Inclusion. May 3-5. Montreal, Canada.

[13] Thompson, J. R., Tassé, M. J., & McLaughlin, C. A. (2008). *Interrater reliability of the Supports Intensity Scale (SIS). American Journal on Mental Retardation, 113,* 231-237.

[14] Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334.

[15] Thompson, J. (Feb 21, 2006). SIS reliability: preliminary findings and procedures. Email from J. Thompson to J. Ashbaugh.

[16] Hammill, D.D., Brown, L., & Bryant, B.R. (1992). A consumer guide to tests in print. Austin, TX: Pro-Ed.

[17] Hammill, D.D., Brown, L., & Bryant, B.R. (1992). A consumer guide to tests in print. Austin, TX: Pro-Ed.

[18] Weiss, J. A., Lunsky, Y., Tassé, M. J., & Durbin, J. (2009). Support for the construct validity of the Supports Intensity Scale based on clinician rankings of need. *Research in Developmental Disabilities. 30,* 933-941.

the originally proposed subscale structure like the SIS results from subscales like A or B or E, the behavioral support needs, and the medical support needs.[19]

[19] Kuppens, S., Bossaert, G,, Buntinx, W., Molleman, C., Abbeele, A. V. & Maes, B. (2010). Factorial validity of the Supports Intensity Scale (SIS). Factorial Validity of the Supports Intensity Scale (SIS). *American Journal on Intellectual and Developmental Disabilities*, *115*(4), 327-339.